PRODUCT DATA SHEET

KONSTRUX ST, CYLINDER HEAD

PRODUCT DESCRIPTION

KonstruX fully threaded screws maximise a joint's load-bearing capacity with a high thread-extraction resistance in both components. If partially threaded screws are used, the joint's load-bearing capacity is limited by the considerably lower head pull-through resistance in the attached part.

KonstruX fully threaded screws are a cost-saving alternative to traditional connections or timber joints such as joist hangers and beams.

ADVANTAGES

· Reduced screwing torque
· High extraction resistance

MATERIAL

· Hardened carbon steel + blue galvanised
· Free of chromium (VI) oxide
· Good resistance to mechanical stresses

CERTIFICATION

· European Technical Assessment ETA 11/0024

ETA CE
Europ. Techn. Bewertung
European Technical Assessment
ETA-11/0024

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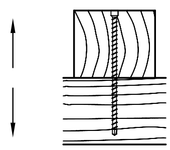
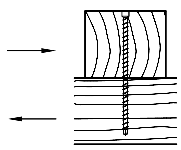
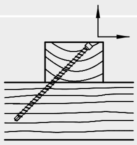
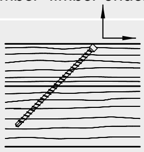
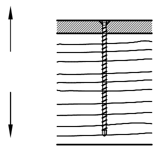
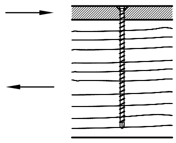
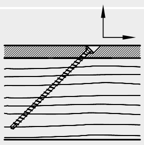
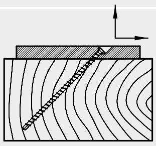
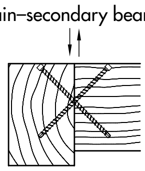
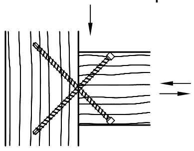
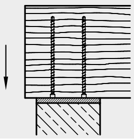
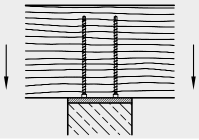
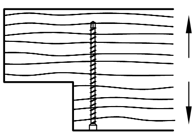
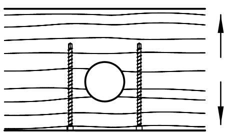
PRODUCT DATA SHEET

KONSTRUX ST, CYLINDER HEAD

TECHNICAL INFORMATION

Example applications		Cylinder head				
		Ø 5,2 [mm]	Ø 5,9 [mm]	Ø 6,5 [mm]	Ø 8,0 [mm]	Ø 10,0 [mm]
Timber–timber tensile loading 	Timber–timber shearing 	✓	✓	✓	✓	✓
Timber–timber under tension at 45° 	Timber–timber under tension at 45° 	✓	✓	✓	✓	✓
Steel–timber tensile loading 	Steel–timber shearing 	-	-	-	-	-
Timber–timber under tension at 45° 	Timber–timber under tension at 45° 	-	-	-	-	-
Main–secondary beam connection 	Post–crosspiece conne 	✓	✓	✓	✓	✓
Support reinforcement 	Support reinforcement 	✓	✓	✓	✓	✓
Transverse-shear reinforcement at notch 	Transverse-shear reinforcement at hole 	✓	✓	✓	✓	✓

The table continues on the next page.

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KONSTRUX ST, CYLINDER HEAD

TECHNICAL INFORMATION

Example applications	Cylinder head				
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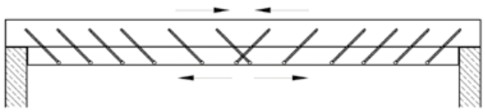
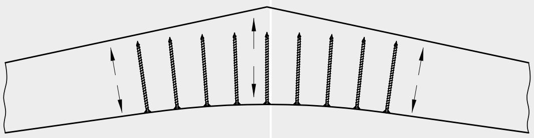
Joist doubling 	-	-	✓	✓	✓
Transverse-shear reinforcement of building trusses 	-	-	-	-	✓

KonstruX ST Cylinder head							
Geometric properties					Mechanical properties		
Nominal Ø [mm]	Root Øi [mm]	Head Øh [mm]	Head high hh [mm]	Tip type	$f_{tens,k}$ [kN]	$f_{ax,k}$ [MPa]	$M_{y,k}$ [Nm]
5,2	3,6	9,8	4,8	Drill	13,0	15,5	10,0
5,9	3,6	11,7	5,7	Drill	17,0	15,5	15,0
6,5	4,5	12,0	5,7	Drill	17,0	15,5	15,0
8	5,2	14,5	7,4	Drill	25,0	12,5	25,0
10	5,9	17,8	8,7	Drill	33,0	11,5	40,0

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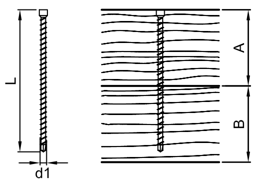
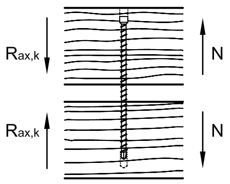
PRODUCT DATA SHEET

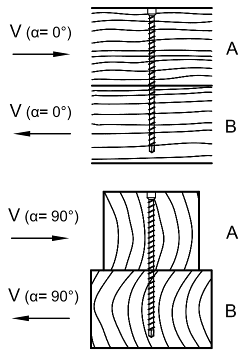
KONSTRUX ST, CYLINDER HEAD

KONSTRUX ST WITH CYLINDER HEAD NEW DRILL POINT 5,2 TO 6,5 MM: TIMBER/TIMBER JOINTS

Dimensions	Extraction resistance	Shearing







Characteristic value of the joint's loadbearing capacity $R_{ax,k}$ acc. toETA-11/0024

Characteristic value of the joint's loadbearing capacity R_k acc. toETA-11/0024

d1 x L [mm]	A [mm]	B [mm]	$R_{ax,k}$ [a] - [kN]	R_k [a] - [kN]	R_k [a] - [kN]
				α= 0°	α= 90°
5,2 x 80	40	60	2,58	2,26	2,26
5,2 x 100	60	60	3,44	2,48	2,48
5,2 x 120	60	80	4,30	2,69	2,69
5,2 x 140	80	80	5,16	2,91	2,91
5,2 x 160	80	100	6,03	3,12	3,12
5,9 x 80	40	60	2,93	3,15	2,42
5,9 x 100	60	60	3,91	3,60	3,03
5,9 x 120	60	80	4,88	3,84	3,41
5,9 x 140	80	80	5,86	4,08	3,65
5,9 x 160	80	100	6,84	4,33	3,89
5,9 x 180	100	100	6,84	4,33	3,89
5,9 x 200	100	120	8,79	4,82	4,37
6,5 x 80	40	60	3,22	3,46	2,64
6,5 x 100	60	60	4,30	3,82	3,28
6,5 x 120	60	80	4,75	3,93	3,47
6,5 x 140	80	80	4,75	3,93	3,47
6,5 x 160	80	100	6,33	4,32	3,86
6,5 x 195	100	100	7,52	4,62	4,16
6,5 x 200	100	120	7,52	4,62	4,16
6,5 x 220	120	120	9,68	5,16	4,55
6,5 x 240	120	140	11,84	5,48	4,55
6,5 x 260	140	140	12,91	5,48	4,55

Calculation according to ETA-11/0024. Wood density ρk= 380 kg/m³. All mechanical values provided should be viewed as subject to the assumptions that have been made and represent example calculations.
All values are calculated minimum values and are subject to typographical and printing errors.
a) The characteristic values of the load-bearing capacity Rk cannot be treated as equivalent to the max. possible load (the max. force). Characteristic values of the load-bearing capacity Rk should be reduced to dimensioning values Rd with regard to the usage class and class of the load duration: Rd= Rk · kmod / γM. The dimensioning values of the load-bearing capacity Rd should be contrasted with the dimensioning values of the loads (Rd ≥ Ed).

Example:
Characteristic value for constant load (dead weight) Gk= 2,00 kN and variable load (e. g. snow load) Qk= 3,00 kN. kmod= 0,9. γM= 1,3.
→ Dimensioning value of the load Ed= 2,00 · 1,35 + 3,00 · 1,5= 7,20 kN.
The load-bearing capacity of the joint is therefore considered to have been demonstrated if Rd ≥ Ed. → min Rk= Rd · γM / kmod
i.e. the characteristic minimum value is calculated based on: min Rk= Rd · γM / kmod → Rk= 7,20 kN · 1,3/0,9= 10,40 kN → comparison with table values.
b) estimated with an efficient quantity of pairs of screws: n0,9. Please note: These are planning aids. Projects must only be calculated by authorised persons.

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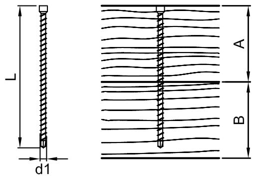
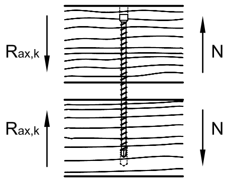
PRODUCT DATA SHEET

KONSTRUX ST, CYLINDER HEAD

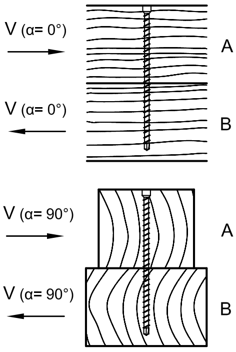
KONSTRUX ST WITH CYLINDER HEAD NEW DRILL POINT 8,0 MM: TIMBER/TIMBER JOINTS

Dimensions	Extraction resistance	Shearing





Characteristic value of the joint's loadbearing capacity $R_{ax,k}$ acc. toETA-11/0024



Characteristic value of the joint's loadbearing capacity R_k acc. toETA-11/0024

d1 x L [mm]	A [mm]	B [mm]	$R_{ax,k}$ a) - [kN]	R_k a) - [kN]	R_k a) - [kN]
				α= 0°	α= 90°
8,0 x 125	60	80	4,61	5,05	4,37
8,0 x 155	80	80	7,11	5,67	4,99
8,0 x 195	100	100	9,01	6,15	5,46
8,0 x 220	120	120	9,48	6,27	5,58
8,0 x 245	120	140	11,38	6,74	6,06
8,0 x 270	140	140	12,33	6,98	6,29
8,0 x 295	140	160	13,28	7,21	6,42
8,0 x 330	160	180	15,17	7,69	6,42
8,0 x 375	180	200	17,07	7,79	6,42
8,0 x 400	200	220	18,97	7,79	6,42
8,0 x 430	220	220	19,92	7,79	6,42
8,0 x 480	240	260	22,76	7,79	6,42
8,0 x 530	260	280	25,00	7,79	6,42
8,0 x 580	280	320	25,00	7,79	6,42

Calculation according to ETA-11/0024. Wood density ρk= 380 kg/m³. All mechanical values provided should be viewed as subject to the assumptions that have been made and represent example calculations.
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a) The characteristic values of the load-bearing capacity Rk cannot be treated as equivalent to the max. possible load (the max. force). Characteristic values of the load-bearing capacity Rk should be reduced to dimensioning values Rd with regard to the usage class and class of the load duration: Rd= Rk · kmod / γM. The dimensioning values of the load-bearing capacity Rd should be contrasted with the dimensioning values of the loads (Rd ≥ Ed).

Example:
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→ Dimensioning value of the load Ed= 2,00 · 1,35 + 3,00 · 1,5= 7,20 kN.
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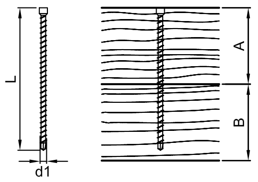
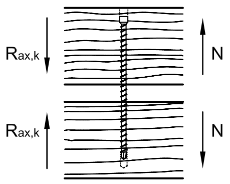
PRODUCT DATA SHEET

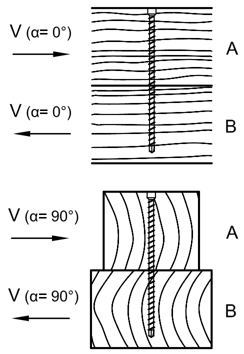
KONSTRUX ST, CYLINDER HEAD

KONSTRUX ST WITH CYLINDER HEAD NEW DRILL POINT 10,0 MM: TIMBER/TIMBER JOINTS

Dimensions	Extraction resistance	Shearing







Characteristic value of the joint's loadbearing capacity $R_{ax,k}$ acc. toETA-11/0024

Characteristic value of the joint's loadbearing capacity R_k acc. toETA-11/0024

d1 x L [mm]	A [mm]	B [mm]	$R_{ax,k}$ a) - [kN]	R_k a) - [kN]	R_k a) - [kN]
				α= 0°	α= 90°
10,0 x 125	60	80	6,92	7,18	6,18
10,0 x 220	120	120	11,53	8,33	7,33
10,0 x 245	120	140	13,84	8,91	7,91
10,0 x 270	140	140	15,00	9,20	8,20
10,0 x 300	160	160	16,15	9,48	8,48
10,0 x 330	160	180	18,46	10,06	8,90
10,0 x 360	180	200	20,76	10,64	8,90
10,0 x 400	200	220	23,07	10,89	8,90
10,0 x 450	220	240	25,38	10,89	8,90
10,0 x 500	240	280	27,68	10,89	8,90
10,0 x 550	260	300	29,99	10,89	8,90
10,0 x 600	300	320	33,00	10,89	8,90
10,0 x 650	320	340	33,00	10,89	8,90
10,0 x 700	340	360	33,00	10,89	8,90
10,0 x 750	360	400	33,00	10,89	8,90
10,0 x 800	400	420	33,00	10,89	8,90
10,0 x 900	440	480	33,00	10,89	8,90
10,0 x 1000	480	540	33,00	10,89	8,90

Calculation according to ETA-11/0024. Wood density ρk= 380 kg/m³. All mechanical values provided should be viewed as subject to the assumptions that have been made and represent example calculations.
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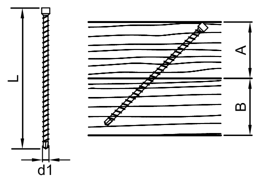
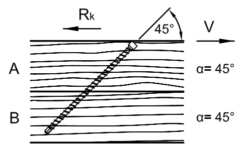
KONSTRUX ST, CYLINDER HEAD

KONSTRUX ST WITH CYLINDER HEAD NEW DRILL POINT 5,2 TO 6,5 MM: TIMBER/TIMBER JOINTS

Dimensions	Tension connection





Characteristic value of the joint's loadbearing capacity $R_{ax,k}$ bzw. R_k acc. toETA-11/0024

d1 x L [mm]	A [mm]	B [mm]	R_k [a] - [kN]
			α= 45°
5,2 x 80	30	40	2,42
5,2 x 100	40	60	2,82
5,2 x 120	40	60	3,22
5,2 x 140	60	60	3,22
5,2 x 160	60	60	4,84
5,9 x 80	30	40	2,75
5,9 x 100	40	60	3,20
5,9 x 120	40	60	3,65
5,9 x 140	60	60	3,65
5,9 x 160	60	60	5,50
5,9 x 180	80	80	6,00
5,9 x 200	80	80	6,40
6,5 x 80	30	40	3,00
6,5 x 100	40	60	3,50
6,5 x 120	40	60	4,00
6,5 x 140	60	60	4,00
6,5 x 160	60	60	6,05
6,5 x 195	80	80	7,05
6,5 x 200	80	80	7,05
6,5 x 220	80	80	8,00
6,5 x 240	100	100	9,05
6,5 x 260	100	100	10,05

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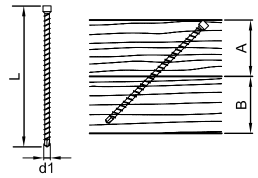
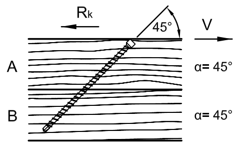
KONSTRUX ST, CYLINDER HEAD

KONSTRUX ST WITH CYLINDER HEAD NEW DRILL POINT 8,0 MM: TIMBER/TIMBER JOINTS

Dimensions	Tension connection
	

Characteristic value of the joint's loadbearing capacity $R_{ax,k}$ bzw. R_k acc. toETA-11/0024

d1 x L [mm]	A [mm]	B [mm]	R_k a) - [kN]
			α= 45°
8,0 x 125	40	60	3,20
8,0 x 155	60	60	4,70
8,0 x 195	80	80	5,49
8,0 x 220	80	100	7,17
8,0 x 245	100	100	6,95
8,0 x 270	100	100	9,61
8,0 x 295	120	100	8,40
8,0 x 330	120	140	10,75
8,0 x 375	140	140	11,87
8,0 x 400	160	140	11,65
8,0 x 430	160	160	13,66
8,0 x 480	180	180	15,12
8,0 x 530	180	200	17,67
8,0 x 580	220	220	17,67

Calculation according to ETA-11/0024. Wood density ρk= 380 kg/m³. All mechanical values provided should be viewed as subject to the assumptions that have been made and represent example calculations.
All values are calculated minimum values and are subject to typographical and printing errors.
a) The characteristic values of the load-bearing capacity Rk cannot be treated as equivalent to the max. possible load (the max. force). Characteristic values of the load-bearing capacity Rk should be reduced to dimensioning values Rd with regard to the usage class and class of the load duration: Rd= Rk · kmod / γM. The dimensioning values of the load-bearing capacity Rd should be contrasted with the dimensioning values of the loads (Rd ≥ Ed).

Example:
Characteristic value for constant load (dead weight) Gk= 2,00 kN and variable load (e. g. snow load) Qk= 3,00 kN. kmod= 0,9. γM= 1,3.
→ Dimensioning value of the load Ed= 2,00 · 1,35 + 3,00 · 1,5= 7,20 kN.
The load-bearing capacity of the joint is therefore considered to have been demonstrated if Rd ≥ Ed. → min Rk= Rd · γM / kmod
i.e. the characteristic minimum value is calculated based on: min Rk= Rd · γM / kmod → Rk= 7,20 kN · 1,3/0,9= 10,40 kN → comparison with table values.
b) estimated with an efficient quantity of pairs of screws: n0,9.
Please note: These are planning aids. Projects must only be calculated by authorised persons.

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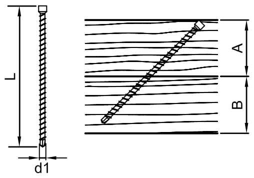
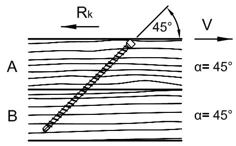
PRODUCT DATA SHEET

KONSTRUX ST, CYLINDER HEAD

KONSTRUX ST WITH CYLINDER HEAD NEW DRILL POINT 10,0 MM: TIMBER/TIMBER JOINTS

Dimensions	Tension connection





Characteristic value of the joint's loadbearing capacity $R_{ax,k}$ bzw. R_k acc. toETA-11/0024

d1 x L [mm]	A [mm]	B [mm]	R_k a) - [kN]
			α= 45°
10,0 x 125	40	60	3,68
10,0 x 220	80	80	8,60
10,0 x 245	100	100	8,60
10,0 x 270	100	100	10,63
10,0 x 300	120	120	10,63
10,0 x 330	120	140	13,07
10,0 x 360	140	140	13,21
10,0 x 400	160	140	14,17
10,0 x 450	160	180	18,25
10,0 x 500	180	200	20,02
10,0 x 550	200	200	21,79
10,0 x 600	220	220	23,33
10,0 x 650	220	240	23,33
10,0 x 700	240	260	23,33
10,0 x 750	260	280	23,33
10,0 x 800	280	300	23,33
10,0 x 900	320	340	23,33
10,0 x 1000	360	380	23,33

Calculation according to ETA-11/0024. Wood density ρk= 380 kg/m³. All mechanical values provided should be viewed as subject to the assumptions that have been made and represent example calculations.
All values are calculated minimum values and are subject to typographical and printing errors.
a) The characteristic values of the load-bearing capacity Rk cannot be treated as equivalent to the max. possible load (the max. force). Characteristic values of the load-bearing capacity Rk should be reduced to dimensioning values Rd with regard to the usage class and class of the load duration: Rd= Rk · kmod / γM. The dimensioning values of the load-bearing capacity Rd should be contrasted with the dimensioning values of the loads (Rd ≥ Ed).

Example:
Characteristic value for constant load (dead weight) Gk= 2,00 kN and variable load (e. g. snow load) Qk= 3,00 kN. kmod= 0,9. γM= 1,3.
→ Dimensioning value of the load Ed= 2,00 · 1,35 + 3,00 · 1,5= 7,20 kN.
The load-bearing capacity of the joint is therefore considered to have been demonstrated if Rd ≥ Ed. → min Rk= Rd · γM / kmod
i.e. the characteristic minimum value is calculated based on: min Rk= Rd · γM / kmod → Rk= 7,20 kN · 1,3/0,9= 10,40 kN → comparison with table values.
b) estimated with an efficient quantity of pairs of screws: n0,9.
Please note: These are planning aids. Projects must only be calculated by authorised persons.

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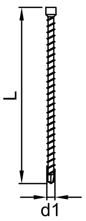
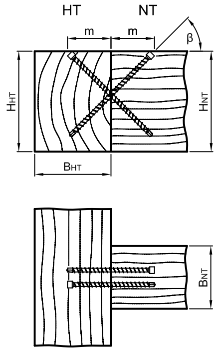
PRODUCT DATA SHEET

KONSTRUX ST, CYLINDER HEAD

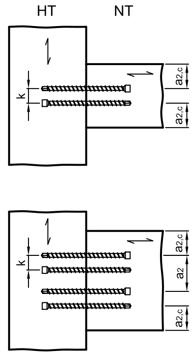
KONSTRUX ST WITH CYLINDER HEAD NEW DRILL POINT 5,2 TO 5,9 MM: MAIN/SECONDARY BEAM JOINTS

Dimensions	Main / secondary beam connection





a_2= min. 33 mm, $a_{2,c}$= min. 20 mm, k= min. 10 mm



Characteristic value of the joint's loadbearing capacity $R_{v,k}$ acc. toETA-11/0024

d1 x L [mm]	min. B_{NT} [mm]	min. H_{NT} [mm]	min. B_{HT} [mm]	min. H_{HT} [mm]	m [mm]	β °	$R_{v,k}$ a) b) - [kN]	Paar (n)
5,2 x 140	60	120	60	120	52	45	8,00	1
	80						14,93	2
	100						21,50	3
	140						27.86	4
5,2 x 160	60	140	80	140	60	45	8,00	1
	80						14,93	2
	100						21,50	3
	140						27.86	4
5,9 x 160	60	140	80	140	60	45	10,00	1
	100						18,66	2
	120						26,88	3
	160						34,83	4
5,9 x 180	60	160	80	160	65	45	10,00	1
	100						18,66	2
	120						26,88	3
	160						34,83	4
5,9 x 200	60	160	80	160	70	45	10,00	1
	100						18,66	2
	120						26,88	3
	160						34,83	4

Calculation according to ETA-11/0024. Wood density ρk= 380 kg/m³. All mechanical values provided should be viewed as subject to the assumptions that have been made and represent example calculations.
All values are calculated minimum values and are subject to typographical and printing errors.
a) The characteristic values of the load-bearing capacity Rk cannot be treated as equivalent to the max. possible load (the max. force). Characteristic values of the load-bearing capacity Rk should be reduced to dimensioning values Rd with regard to the usage class and class of the load duration: Rd= Rk · kmod / γM. The dimensioning values of the load-bearing capacity Rd should be contrasted with the dimensioning values of the loads (Rd ≥ Ed).

Example:
Characteristic value for constant load (dead weight) Gk= 2,00 kN and variable load (e. g. snow load) Qk= 3,00 kN. kmod= 0,9. γM= 1,3.
→ Dimensioning value of the load Ed= 2,00 · 1,35 + 3,00 · 1,5= 7,20 kN.
The load-bearing capacity of the joint is therefore considered to have been demonstrated if Rd ≥ Ed. → min Rk= Rd · γM / kmod
i.e. the characteristic minimum value is calculated based on: min Rk= Rd · γM / kmod → Rk= 7,20 kN · 1,3/0,9= 10,40 kN → comparison with table values.
b) estimated with an efficient quantity of pairs of screws: n0,9.
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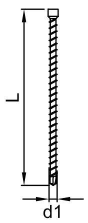
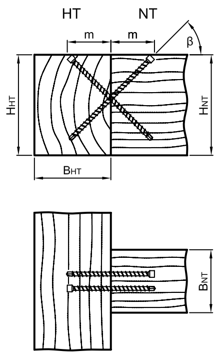
PRODUCT DATA SHEET

KONSTRUX ST, CYLINDER HEAD

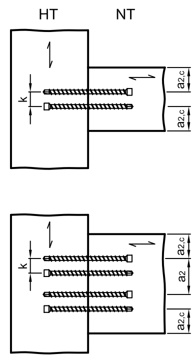
KONSTRUX ST WITH CYLINDER HEAD NEW DRILL POINT 6,5 MM: MAIN/SECONDARY BEAM JOINTS

Dimensions	Main / secondary beam connection





a_2= min. 33 mm, $a_{2,c}$= min. 20 mm, k= min. 10 mm



Characteristic value of the joint's loadbearing capacity $R_{v,k}$ acc. toETA-11/0024

d1 x L [mm]	min. B_{NT} [mm]	min. H_{NT} [mm]	min. B_{HT} [mm]	min. H_{HT} [mm]	m [mm]	β °	$R_{v,k}$ a) b) - [kN]	Paar (n)
6,5 x 195	60	160	80	160	69	45	10,91	1
	100						20,36	2
	120						29,33	3
	160						38,00	4
6,5 x 200	60	160	80	160	70	45	10,91	1
	100						20,36	2
	120						29,33	3
	160						38,00	4
6,5 x 220	60	180	100	180	80	45	12,90	1
	100						24,07	2
	120						34,67	3
	160						44,92	4
6,5 x 240	60	180	100	180	85	45	12,90	1
	100						24,07	2
	120						34,67	3
	160						44,92	4
6,5 x 260	60	200	100	200	90	45	12,90	1
	100						24,07	2
	120						34,67	3
	160						44,92	4

Calculation according to ETA-11/0024. Wood density ρk= 380 kg/m³. All mechanical values provided should be viewed as subject to the assumptions that have been made and represent example calculations.
All values are calculated minimum values and are subject to typographical and printing errors.
a) The characteristic values of the load-bearing capacity Rk cannot be treated as equivalent to the max. possible load (the max. force). Characteristic values of the load-bearing capacity Rk should be reduced to dimensioning values Rd with regard to the usage class and class of the load duration: Rd= Rk · kmod / γM. The dimensioning values of the load-bearing capacity Rd should be contrasted with the dimensioning values of the loads (Rd ≥ Ed).

Example:
Characteristic value for constant load (dead weight) Gk= 2,00 kN and variable load (e. g. snow load) Qk= 3,00 kN. kmod= 0,9. γM= 1,3.
→ Dimensioning value of the load Ed= 2,00 · 1,35 + 3,00 · 1,5= 7,20 kN.
The load-bearing capacity of the joint is therefore considered to have been demonstrated if Rd ≥ Ed. → min Rk= Rd · γM / kmod
i.e. the characteristic minimum value is calculated based on: min Rk= Rd · γM / kmod → Rk= 7,20 kN · 1,3/0,9= 10,40 kN → comparison with table values.
b) estimated with an efficient quantity of pairs of screws: n0,9.
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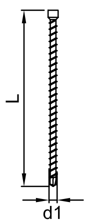
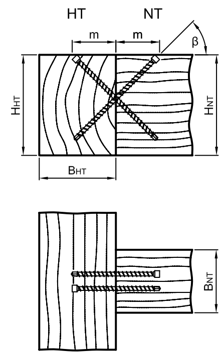
PRODUCT DATA SHEET

KONSTRUX ST, CYLINDER HEAD

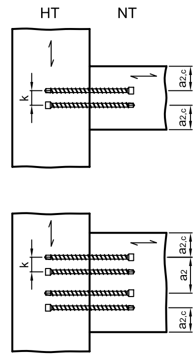
KONSTRUX ST WITH CYLINDER HEAD NEW DRILL POINT 8,0 MM: MAIN/SECONDARY BEAM JOINTS

Dimensions	Main / secondary beam connection





a_2= min. 40 mm, $a_{2,c}$= min. 24 mm, k= min. 12 mm



Characteristic value of the joint's loadbearing capacity $R_{v,k}$ acc. toETA-11/0024

d1 x L [mm]	min. B_{NT} [mm]	min. H_{NT} [mm]	min. B_{HT} [mm]	min. H_{HT} [mm]	m [mm]	β °	$R_{v,k}$ a) b) - [kN]	Paar (n)
8,0 x 245	80	200	100	200	87	45	16,43	1
	100						30,66	2
	140						44,16	3
	180						57,21	4
8,0 x 270	80	200	100	200	95	45	17,44	1
	100						32,55	2
	140						46,88	3
	180						57,21	4
8,0 x 295	80	220	120	220	104	45	17,44	1
	100						32,55	2
	140						46,88	3
	180						60,74	4
8,0 x 330	80	260	140	260	117	45	17,44	1
	100						32,55	2
	140						46,88	3
	180						60,74	4
8,0 x 375	80	280	160	280	133	45	17,44	1
	100						32,55	2
	140						46,88	3
	180						60,74	4

Calculation according to ETA-11/0024. Wood density ρk= 380 kg/m³. All mechanical values provided should be viewed as subject to the assumptions that have been made and represent example calculations.
All values are calculated minimum values and are subject to typographical and printing errors.
a) The characteristic values of the load-bearing capacity Rk cannot be treated as equivalent to the max. possible load (the max. force). Characteristic values of the load-bearing capacity Rk should be reduced to dimensioning values Rd with regard to the usage class and class of the load duration: Rd= Rk · kmod / γM. The dimensioning values of the load-bearing capacity Rd should be contrasted with the dimensioning values of the loads (Rd ≥ Ed).

Example:
Characteristic value for constant load (dead weight) Gk= 2,00 kN and variable load (e. g. snow load) Qk= 3,00 kN. kmod= 0,9. γM= 1,3.
→ Dimensioning value of the load Ed= 2,00 · 1,35 + 3,00 · 1,5= 7,20 kN.
The load-bearing capacity of the joint is therefore considered to have been demonstrated if Rd ≥ Ed. → min Rk= Rd · γM / kmod
i.e. the characteristic minimum value is calculated based on: min Rk= Rd · γM / kmod → Rk= 7,20 kN · 1,3/0,9= 10,40 kN → comparison with table values.
b) estimated with an efficient quantity of pairs of screws: n0,9.
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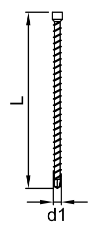
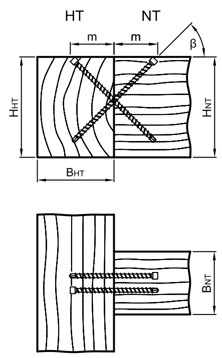
PRODUCT DATA SHEET

KONSTRUX ST, CYLINDER HEAD

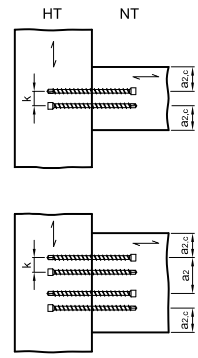
KONSTRUX ST WITH CYLINDER HEAD NEW DRILL POINT 8,0 MM: MAIN/SECONDARY BEAM JOINTS

Dimensions	Main / secondary beam connection





a_2= min. 40 mm, $a_{2,c}$= min. 24 mm, k= min. 12 mm



Characteristic value of the joint's loadbearing capacity $R_{v,k}$ acc. toETA-11/0024

d1 x L [mm]	min. B_{NT} [mm]	min. H_{NT} [mm]	min. B_{HT} [mm]	min. H_{HT} [mm]	m [mm]	β °	$R_{v,k}$ a) b) - [kN]	Paar (n)
8,0 x 400	80	300	160	300	141	45	17,44	1
	100						32,55	2
	140						46,88	3
	180						60,74	4
8,0 x 430	80	320	180	320	152	45	17,44	1
	100						32,55	2
	140						46,88	3
	180						60,74	4
8,0 x 480	80	360	180	360	170	45	17,44	1
	100						32,55	2
	140						46,88	3
	180						60,74	4
8,0 x 530	80	400	200	400	187	45	17,44	1
	100						32,55	2
	140						46,88	3
	180						57,21	4
8,0 x 580	80	440	220	440	205	45	17,44	1
	100						32,55	2
	140						46,88	3
	180						57,21	4

Calculation according to ETA-11/0024. Wood density ρk= 380 kg/m³. All mechanical values provided should be viewed as subject to the assumptions that have been made and represent example calculations.
All values are calculated minimum values and are subject to typographical and printing errors.
a) The characteristic values of the load-bearing capacity Rk cannot be treated as equivalent to the max. possible load (the max. force). Characteristic values of the load-bearing capacity Rk should be reduced to dimensioning values Rd with regard to the usage class and class of the load duration: Rd= Rk · kmod / γM. The dimensioning values of the load-bearing capacity Rd should be contrasted with the dimensioning values of the loads (Rd ≥ Ed).

Example:
Characteristic value for constant load (dead weight) Gk= 2,00 kN and variable load (e. g. snow load) Qk= 3,00 kN. kmod= 0,9. γM= 1,3.
→ Dimensioning value of the load Ed= 2,00 · 1,35 + 3,00 · 1,5= 7,20 kN.
The load-bearing capacity of the joint is therefore considered to have been demonstrated if Rd ≥ Ed. → min Rk= Rd · γM / kmod
i.e. the characteristic minimum value is calculated based on: min Rk= Rd · γM / kmod → Rk= 7,20 kN · 1,3/0,9= 10,40 kN → comparison with table values.
b) estimated with an efficient quantity of pairs of screws: n0,9.
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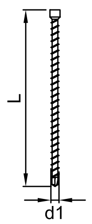
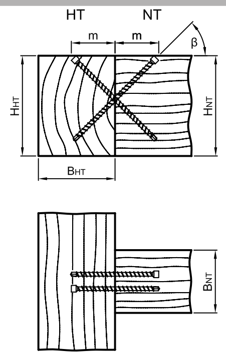
PRODUCT DATA SHEET

KONSTRUX ST, CYLINDER HEAD

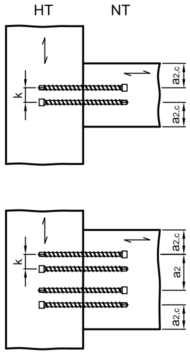
KONSTRUX ST WITH CYLINDER HEAD NEW DRILL POINT 10,0 MM: MAIN/ SECONDARY BEAM JOINTS

Dimensions	Main / secondary beam connection





a_2= min. 50 mm, $a_{2,c}$= min. 30 mm, k= min. 15 mm



Characteristic value of the joint's loadbearing capacity $R_{v,k}$ acc. toETA-11/0024

d1 x L [mm]	min. B_{NT} [mm]	min. H_{NT} [mm]	min. B_{HT} [mm]	min. H_{HT} [mm]	m [mm]	β °	$R_{v,k}$ a) b) - [kN]	Paar (n)
10,0 x 300	80	240	120	240	106	45	23,67	1
	140						44,18	2
	180						63,63	3
	240						82,44	4
10,0 x 330	80	260	140	260	117	45	23,67	1
	140						44,18	2
	180						63,63	3
	240						82,44	4
10,0 x 360	80	280	140	280	127	45	23,67	1
	140						44,18	2
	180						63,63	3
	240						82,44	4
10,0 x 400	80	300	160	300	141	45	23,67	1
	140						44,18	2
	180						63,63	3
	240						82,44	4
10,0 x 450	80	340	180	340	159	45	23,67	1
	140						44,18	2
	180						63,63	3
	240						82,44	4
10,0 x 500	80	380	200	380	177	45	23,67	1
	140						44,18	2
	180						63,63	3
	240						82,44	4

Calculation according to ETA-11/0024. Wood density ρk= 380 kg/m³. All mechanical values provided should be viewed as subject to the assumptions that have been made and represent example calculations.
All values are calculated minimum values and are subject to typographical and printing errors.
a) The characteristic values of the load-bearing capacity Rk cannot be treated as equivalent to the max. possible load (the max. force). Characteristic values of the load-bearing capacity Rk should be reduced to dimensioning values Rd with regard to the usage class and class of the load duration: Rd= Rk · kmod / γM. The dimensioning values of the load-bearing capacity Rd should be contrasted with the dimensioning values of the loads (Rd ≥ Ed).

Example:
Characteristic value for constant load (dead weight) Gk= 2,00 kN and variable load (e. g. snow load) Qk= 3,00 kN. kmod= 0,9. γM= 1,3.
→ Dimensioning value of the load Ed= 2,00 · 1,35 + 3,00 · 1,5= 7,20 kN.
The load-bearing capacity of the joint is therefore considered to have been demonstrated if Rd ≥ Ed. → min Rk= Rd · γM / kmod
i.e. the characteristic minimum value is calculated based on: min Rk= Rd · γM / kmod → Rk= 7,20 kN · 1,3/0,9= 10,40 kN → comparison with table values.
b) estimated with an efficient quantity of pairs of screws: n0,9.
Please note: These are planning aids. Projects must only be calculated by authorised persons.

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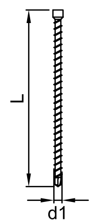
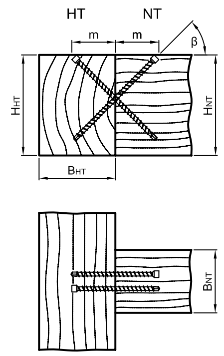
PRODUCT DATA SHEET

KONSTRUX ST, CYLINDER HEAD

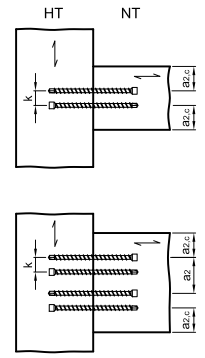
KONSTRUX ST WITH CYLINDER HEAD NEW DRILL POINT 10,0 MM: MAIN/SECONDARY BEAM JOINTS

Dimensions	Main / secondary beam connection





a_2= min. 50 mm, a_{2c}= min. 30 mm, k= min. 15 mm



Characteristic value of the joint's loadbearing capacity $R_{v,k}$ acc. toETA-11/0024

d1 x L [mm]	min. B_{NT} [mm]	min. H_{NT} [mm]	min. B_{HT} [mm]	min. H_{HT} [mm]	m [mm]	β °	$R_{v,k}$ a) b) - [kN]	Paar (n)
10,0 x 550	80	400	200	400	195	45	23,67	1
	140						44,18	2
	180						62,63	3
	240						82,44	4
10,0 x 600	80	440	220	440	212	45	23,67	1
	140						44,18	2
	180						62,63	3
	240						82,44	4
10,0 x 650	80	480	240	480	230	45	23,67	1
	140						44,18	2
	180						62,63	3
	240						82,44	4
10,0 x 700	80	520	260	520	250	45	23,67	1
	140						44,18	2
	180						62,63	3
	240						82,44	4
10,0 x 750	80	560	280	560	265	45	23,67	1
	140						44,18	2
	180						62,63	3
	240						82,44	4
10,0 x 800	80	600	300	600	280	45	23,67	1
	140						44,18	2
	180						62,63	3
	240						82,44	4

Calculation according to ETA-11/0024. Wood density ρk= 380 kg/m³. All mechanical values provided should be viewed as subject to the assumptions that have been made and represent example calculations.
All values are calculated minimum values and are subject to typographical and printing errors.
a) The characteristic values of the load-bearing capacity Rk cannot be treated as equivalent to the max. possible load (the max. force). Characteristic values of the load-bearing capacity Rk should be reduced to dimensioning values Rd with regard to the usage class and class of the load duration: Rd= Rk · kmod / γM. The dimensioning values of the load-bearing capacity Rd should be contrasted with the dimensioning values of the loads (Rd ≥ Ed).

Example:
Characteristic value for constant load (dead weight) Gk= 2,00 kN and variable load (e. g. snow load) Qk= 3,00 kN. kmod= 0,9. γM= 1,3.
→ Dimensioning value of the load Ed= 2,00 · 1,35 + 3,00 · 1,5= 7,20 kN.
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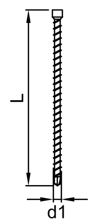
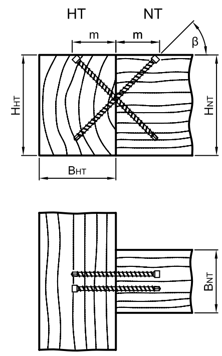
PRODUCT DATA SHEET

KONSTRUX ST, CYLINDER HEAD

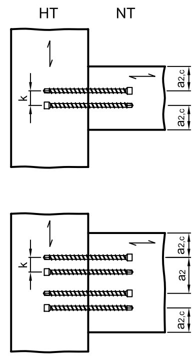
KONSTRUX ST WITH CYLINDER HEAD NEW DRILL POINT 10,0 MM: MAIN/SECONDARY BEAM JOINTS

Dimensions	Main / secondary beam connection





a_2= min. 50 mm, $a_{2,c}$= min. 30 mm, k= min. 15 mm



Characteristic value of the joint's loadbearing capacity $R_{v,k}$ acc. toETA-11/0024

d1 x L [mm]	min. B_{NT} [mm]	min. H_{NT} [mm]	min. B_{HT} [mm]	min. H_{HT} [mm]	m [mm]	β °	$R_{v,k}$ a) b) - [kN]	Paar (n)
10,0 x 900	80	680	340	680	320	45	23,67	1
	140						44,18	2
	180						62,63	3
	240						82,44	4
10,0 x 1000	80	720	360	720	350	45	23,67	1
	140						44,18	2
	180						62,63	3
	240						82,44	4

Calculation according to ETA-11/0024. Wood density ρk= 380 kg/m³. All mechanical values provided should be viewed as subject to the assumptions that have been made and represent example calculations.
All values are calculated minimum values and are subject to typographical and printing errors.
a) The characteristic values of the load-bearing capacity Rk cannot be treated as equivalent to the max. possible load (the max. force). Characteristic values of the load-bearing capacity Rk should be reduced to dimensioning values Rd with regard to the usage class and class of the load duration: Rd= Rk · kmod / γM. The dimensioning values of the load-bearing capacity Rd should be contrasted with the dimensioning values of the loads (Rd ≥ Ed).

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PRODUCT DATA SHEET

KONSTRUX ST, CYLINDER HEAD

INSTRUCTIONS FOR USE

KonstruX fully threaded screws do not require pilot drilling when used in softwood. However, for longer screws and for KonstruX AG 11.3 mm it is recommended to drill a pilot hole of approx. 1/3 the screw length in order to prevent the (long) screws from running too far into the wood.

The pilot-drilling diameters in softwood $d_{0,\ NH}$ are:

- KonstruX ST 5,2 mm, 5,9 mm, 6,5 mm → rarely required in softwood
- KonstruX ST 8,0 mm → $d_{0,\ NH}$ = 5,0 mm
- KonstruX ST 10,0 mm → $d_{0,\ NH}$ = 6,0 mm
- KonstruX AG 11,3 mm → $d_{0,\ NH}$ = 8,0 mm

Pilot-drilling is mandatory for use in hardwood. The pilot-drilling diameters in softwood d0,LH are:

- KonstruX ST 5,2 mm → d 0, LH = 3,5 mm
- KonstruX ST 5,9 mm → d 0, LH = 4,0 mm
- KonstruX ST 6,5 mm → $d_{0,\ LH}$ = 5,0 mm
- KonstruX ST 8,0 mm → $d_{0,\ LH}$ = 6,0 mm
- KonstruX ST 10,0 mm → $d_{0,\ LH}$ = 8,0 mm

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KONSTRUX ST, CYLINDER HEAD

PRODUCT TABLE

KonstruX ST, cylinder head			
Art. no.	Dimension [mm]	Drive	PU
Ø 5,2 mm			
100425	5,2 x 80	TX 25 •	100
100427	5,2 x 100	TX 25 •	100
100428	5,2 x 120	TX 25 •	100
100430	5,2 x 140	TX 25 •	100
100431	5,2 x 160	TX 25 •	100
Ø 5,9 mm			
100410	5,9 x 80	TX30 •	100
100412	5,9 x 100	TX30 •	100
100413	5,9 x 120	TX30 •	100
100415	5,9 x 140	TX30 •	100
100416	5,9 x 160	TX30 •	100
100417	5,9 x 180	TX30 •	100
100418	5,9 x 200	TX30 •	100
Ø 6,5 mm			
904808	6,5 x 80	TX30 •	100
904809	6,5 x 100	TX30 •	100
904810	6,5 x 120	TX30 •	100
904811	6,5 x 140	TX30 •	100
904812	6,5 x 160	TX30 •	100
904813	6,5 x 195	TX30 •	100
100063[a)]	6,5 x 200	TX30 •	100
100064[a)]	6,5 x 220	TX30 •	100
100065[a)]	6,5 x 240	TX30 •	100
100066[a)]	6,5 x 260	TX30 •	100
Ø 8,0 mm			
954081	8,0 x 125	TX40 •	50
904825	8,0 x 155	TX40 •	50
904826	8,0 x 195	TX40 •	50
904827	8,0 x 220	TX40 •	50
904828	8,0 x 245	TX40 •	50
904834	8,0 x 270	TX40 •	50
904829	8,0 x 295	TX40 •	50
904830	8,0 x 330	TX40 •	50
904831	8,0 x 375	TX40 •	50
904832	8,0 x 400	TX40 •	50
944804	8,0 x 430	TX40 •	50
944805	8,0 x 480	TX40 •	50
944806	8,0 x 530	TX40 •	50
944807	8,0 x 580	TX40 •	50

a) European Technical Assessment (ETA) has been applied for.

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KONSTRUX ST, CYLINDER HEAD

PRODUCT TABLE

KonstruX ST, cylinder head			
Art. no.	Dimension [mm]	Drive	PU
Ø 10,0 mm			
904872	10,0 x 195	TX50 •	25
904873	10,0 x 220	TX50 •	25
904874	10,0 x 245	TX50 •	25
904875	10,0 x 270	TX50 •	25
904815	10,0 x 300	TX50 •	25
904816	10,0 x 330	TX50 •	25
904817	10,0 x 360	TX50 •	25
904818	10,0 x 400	TX50 •	25
904819	10,0 x 450	TX50 •	25
904820	10,0 x 500	TX50 •	25
904821	10,0 x 550	TX50 •	25
904822	10,0 x 600	TX50 •	25
100080[a)]	10,0 x 650	TX50 •	25
100081[a)]	10,0 x 700	TX50 •	25
100082[a)]	10,0 x 750	TX50 •	25
100083[a)]	10,0 x 800	TX50 •	25
100084[a)]	10,0 x 900	TX50 •	25
100085[a)]	10,0 x 1000	TX50 •	25

a) European Technical Assessment (ETA) has been applied for.

If you are not familiar with how this product is used, and particularly with the product's intended use, please contact our Application Technology department (Technik@eurotec.team).

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